

SCHOOL OF EECE

ECE107L/A13

SIGNALS SPECTRA, AND SIGNAL PROCESSING

PROJECT

**Submitted by:**

**GROUP 3**

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**INTRODUCTION OF THE PROJECT**

Modern technology now enable us to do a lot of different things. While many other programs offer features that lets us do these things easily, it can sometimes be beneficial to us that we learn how do these programs work. One of these programs is Photoshop which is developed by Adobe. It is a powerful software that allows us to edit images and make modifications that is before is complicated and difficult to do. With this application, innovation simply took place and lots of other programs were also created similar to that of Photoshop.

# **ACKNOWLEDGMENT**

Our deepest gratitude to our Engr. Leonardo D. Valiente Jr. for whole-heartedly teaching and guiding us about digital signal processing. His teachings made this project a possibility as the professor of our digital signal processing laboratory class.

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# **PROGRAM DESCRIPTION**

The program is developed under MATLAB R2016b with the Image Processing Toolbox. It retrieves an image file with a .jpg, .tif, .png, and .gif. It has the capability to do FIR filter image processing, such as motion, gaussian, average, unsharp, laplacian, and sobel. The input image can also be converted to binary or grayscale. Morphological conversions such as invert, erosion, dilate, estimate, and subtract are also in the program. A contrast slider is also present in the program, which has an option of low in, low out, high in, or high out. Upon opening an input image, a histogram is automatically generated. This includes the red, green, and blue spectrum. It is also automatically generated after using an option and then clicking the apply button and after configuring the generated image it can be save using file menu and ‘Save Generated Image’.

# **SCOPE AND LIMITATIONS**

The program is only limited to image files that are locally stored in the machine. It cannot retrieve an image located on the internet and download it on the host machine. Apart from the provided options in the program itself, it cannot do anything more.

# **SCREEN CAPTURE OF IMAGE FILE**

# **ALL M-FILES USED IN THE PROJECT**

# **THREE (3) SAMPLE OUTPUT**

# **REFERENCES**